

## INSTRUCTION FOR USING LUBRA™ PLATES (CURVED)

### **INDICATIONS**

Curved Lubra™ plates,\* sold in pairs, are for use in the dog, cat, or subhuman primate in any situation, such as vertebral fracture or luxation, requiring stabilization of the spinal column (ref.1-5, 10-12, 14, 16, 19, 21). They are also effective in fractures of the scapula (7,8) pelvis (6,9) and for reconstructive surgery of the chest (13) and orbit (15). They are not effective in young animals in which the spinous processes are not well calcified.

Straight single Lubra™ plates are available for ventral cervical fixation (20). Separate instructions describe their use.

### **USES OF CURVED LUBRA™ PLATES IN SPINAL PLATING**

These plates are unique in design and method of application. Because they are flexible, they adapt themselves to the contours of the spinous processes. The checkered surface, which is applied facing the processes, forms a friction grip. For this reason, no bolts are placed through the spinous processes and they are not weakened.

### **Plate sizes and approximate number of bolts required:**

**Small** – for dogs 20 pounds and under – 6 bolts

**Medium** – for dogs 20 – 40 pounds – 8 bolts

**Large** – for dogs 40 – 70 pounds – 8 bolts

**Extra Large** – for dogs 70 pounds and over – 10 bolts

Because of variations in body conformation, these figures are approximations, and it is well to have an assortment of plates sterilized to ensure the right size is available. *The plates may be cut to fit the patient with bone cutters at the operating table.* They may also be shaped or drilled with other equipment.

### **BOLTS**

The plates are fixed in position with stainless steel bolts, which are also available from Sontec Instruments™, Inc. A total of 4 to 10 bolts may be necessary for one plating procedure, depending upon the size of the plates used. Since the bolts are not placed through the spinous processes, it is extremely important that they be locked in position.

### **STERILIZATION**

Lubra™ plates preferably are sterilized by autoclaving or by use of ethylene oxide. If the latter is used, an adequate degassing procedure must be followed, since the plastic absorbs the gas.

## **DIRECTIONS FOR INSERTION**

Strict aseptic conditions must be observed during insertion of this device.

To apply Lubra™ Plates to the spine, a dorsal approach is used. At least two, and preferably three, spinous processes are exposed cranial and caudal to the site of the existing lesion. Following surgical corrections of the lesion, the plates are applied. Starting either cranially or caudally, the plates are positioned to extend far enough beyond the spinous processes to be spanned so that a bolt can be passed through the first of the last holes. If the plates are too long, they can be shortened with bone cutters.

During insertion of the bolts, the plates are placed as far ventrally as possible and are held in position with Lane bone-holding forceps (available at Sontec Instruments™, Inc.), or manually by an assistant. One bolt is inserted between each spinous process to be encompassed, plus one beyond the last process on each end (see figures). All bolts should be tightened so that the plates bend around the spinous processes, forming a secure friction grip. This should bring the plates in apposition where they are penetrated by a bolt. Once all bolts are tightened, the wound is closed routinely.

Most dogs, when the spinal lesion has been successfully corrected, will be ambulatory within 24 hours. Casting is not necessary, but the patient should be closely confined for 30 days to avoid undue stress on the back. If the spinal cord has been injured preoperatively, or is exposed during surgery, supportive measures are indicated to prevent cord edema during the first few postoperative days.

## **OTHER USES FOR LUBRA™ PLATES**

Lubra™ plates have been used singly to stabilize pelvic fractures (6,9). The plates have also been used in treatment of scapular fractures, being applied on the scapular spine or in the supraspinous and infraspinous fossas (7,8). In these applications, orthopedic screws and/or bolts may provide the best attachment. When used as ribs in reconstruction of the chest wall, plates are wired to the remaining rib ends (13). Small plates may be used in reconstruction of the orbit (15).

## **WARNING**

Because Sontec Instruments™ has no control over the use, sterilization, or method of insertion of Lubra™ Plates, no warranty is expressed or implied concerning their efficacy in any situation. Furthermore, while the material from which these plates are made has been implanted repeatedly in dogs without deleterious effects, no warranty is expressed or implied concerning its tissue compatibility. The use of Lubra™ plates should be restricted to the canine, feline, and subhuman primate species.

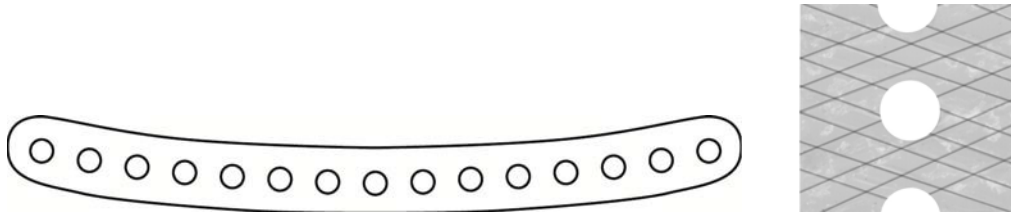


Figure 1 – Single plate, horizontal view. Plates are cross hatched to grip spinous processes of vertebra. Holes are provided for bolts.



Figure 2 – Lateral picture of plates applied to spinous processes. Bolts are placed between spines rather than run through them as done conventionally.



Figure 3 – Picture of plates applied to spinous processes. Plastic plates bend and conform to the spines, thus gripping them tightly.

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### STRAIGHT LUBRA™ PLATES

Sontec Instruments™ offers single Lubra™ plates\* in a straight configuration 3-7/16" long by 7/16" or 1/2" in width. These plates can be used for a variety of procedures but are designed particularly for ventral fixation of the cervical vertebrae in the canine "wobbler syndrome" (Figures 1-4).

In cervical fixation of **large dogs** (85-100 lbs), the following sizes of screws (3.5mm diameter) are suggested:

- If Lesion is at C6-7: C6 – 18mm Screws (2)  
C7 – 16mm Screws (2)
- If Lesion is at C5-6: C5 – 16mm Screws (2)  
C6 – 18mm Screws (2)

In **medium sized** dogs up to 85 lbs:

- If Lesion is at C6-7: C6 – 16mm Screws (2)  
C7 – 16mm Screws (2)
- If Lesion is at C5-6: C5 – 14mm Screws (2)  
C6 – 16mm Screws (2)

Extreme caution must be exercised to prevent over-insertion of the screws with subsequent spinal cord damage.

Strict aseptic conditions must be observed during insertion of this device. Lubra™ plates are sterilized by autoclaving or ethylene oxide. If the latter is used, an adequate degassing procedure must be followed, since the plastic absorbs the gas. They may be cut to fit the patient with bone cutters at the operating table. They may also be shaped or drilled with other equipment. The plates are applied with the cross-hatched surface against the bone.

#### **WARNING**

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Procedure for Correction of Canine "Wobbler Syndrome" with Lubra™ Plates

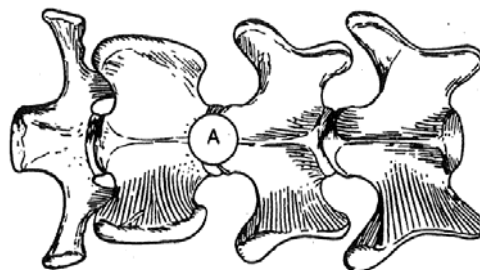


Figure 1. Ventral hole (A) is drilled through the disc and vertebrae at the site of spinal cord pressure.

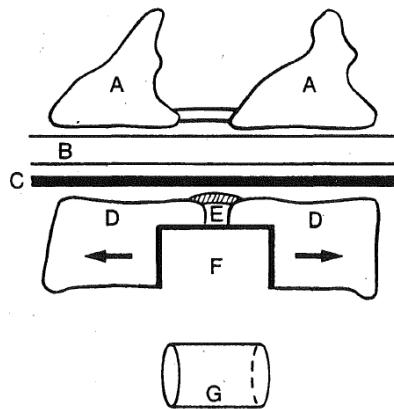


Figure 2. Traction is used to force the neck into extension to relieve the pressure. A bone graft is prepared for insertion. (A) Spinous Processes of vertebra; (B) spinal cord; (C) dorsal longitudinal; (D) vertebral bodies; (E) fibrosis of dorsal annulus; (F) hole in vertebral bodies and disc; (G) bone graft

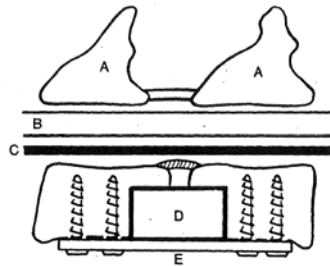


Figure 3. Bone graft is inserted and Lubra™ plate is fastened to vertebra with screws to keep graft in place. (A) Spinous Processes of Vertebrae; (B) spinal cord; (C) dorsal longitudinal ligament; (D) bone graft; (E) Lubra™ plate screwed to ventral aspect of vertebrae

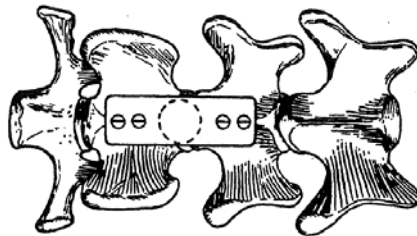


Figure 4. Ventral aspect of vertebrae with Lubra™ plate fastened in position.

#### Reference

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